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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,193	06/08/2007	Tomoaki Yamanoi	294676US40PCT	6513
22850 7590 07/24/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER NGUYEN, HUNG D				
ART UNIT 3742		PAPER NUMBER		
NOTIFICATION DATE 07/24/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/589,193

Applicant(s)

YAMANOI ET AL.

Examiner

HUNG NGUYEN

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
Paper No(s)/Mail Date 8/11/2006, 8/24/2007
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it is more than 150 words long. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. In claim 8, the recitation of "wherein the thickness (t2) of the skin material after hot roll cladding" at line 2-3 render the claim indefinite because (t2) is the thickness of the molten metal, not the skin material as recited in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-4, 8, 11-13 and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by Kubota et al. (JP 2003-071588) (cited by applicant).

8. Regarding claims 1 and 12, Kubota et al. discloses a brazing filler sheet, brazing sheet, and method thereof, comprising the steps of: continuously supplying molten metal (Par. 14, English translation) into a gap between a pair of cooling rollers 7 (Figure below) to cast a core material (Par. 12, English translation); and cladding skin materials on both surfaces of the core material with hot rolling by continuously supplying the skin materials on peripheral surfaces of the cooling rollers so that the skin materials prevent direct contact between the cooling rollers and the molten metal (Par. 27, English translation), wherein the skin materials 1 (Figure below) are supplied so as to come into contact with the peripheral surfaces of the cooling rollers 7 (Figure below), and wherein a contact distance L1 (Figure below) from a contact starting point P1 (Figure below) where the skin material begins to come into contact with the cooling roller to a meeting point P2 (Figure below) where the skin material 1 (Figure below) begins to come into contact with the molten metal is set to 100 times or more of a thickness 1050 (Figure below) of the skin material.

9. Regarding claim 2, Kubota et al. discloses brazing filler sheet, brazing sheet, and method thereof, wherein the core material and the skin material are made of aluminum or its alloy (Par. 17, English translation).
10. Regarding claim 3, Kubota et al. discloses brazing filler sheet, brazing sheet, and method thereof, wherein the thickness 1050 (Figure below) of the skin material is 20 to 400 μm (Par. 24-25, English translation).
11. Regarding claim 4, Kubota et al. discloses brazing filler sheet, brazing sheet, and method thereof, wherein at least one of the skin materials is made of Al--Si series alloy (Par. 17, English translation).
12. Regarding claim 8, Kubota et al. discloses brazing filler sheet, brazing sheet, and method thereof, wherein a thickness 4104 (Figure below) of the skin material after hot roll cladding is 0.5 to 8 mm (Par. 30, English translation).
13. Regarding claims 11 and 13, Kubota et al. discloses brazing filler sheet, brazing sheet, and method thereof, wherein cold rolling is performed after the hot roll cladding (Par. 12).
14. Regarding claim 16, Kubota et al. discloses brazing filler sheet, brazing sheet, and method thereof comprising: a pair of cooling rollers 7 (Figure below) for continuously casting molten metal 2 (Figure below) passing through a gap formed between the cooling rollers; a molten metal supplying portion for supplying the molten metal to become a core material into the gap; and a skin material 1 (Figure below) supplying portion for supplying a skin material on a peripheral surface of the cooling roller 7 (Figure below) and making the skin material come into contact with the

peripheral surface of the cooling roller before the skin material joins the molten metal (Figure below), wherein the cooling rolls are rotated while continuously supplying the molten metal and the skin material to the cooling rolls to thereby continuously clad the skin materials 1050 (Figure below) to both surfaces of the core material 4104 (Figure below) (Par. 31, English translation).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (JP 2003-071588) in view of Syslak et al. (WO 02/090031) (cited by applicant).

17. Regarding claims 5-7, Kubota et al. discloses all the claimed features as set forth above except for the Al-Si series alloy consists essentially of Si: 5 to 15 mass %, Fe: 0.05 to 0.6 mass %, Cu: 0.01 to 0.6 mass %, Mn: 0.01 to 0.8 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.2 mass %, and the balance being Al and inevitable impurities. Syslak et al. discloses the Al-Si series alloy consists essentially of Si: 5 to 15 mass %, Fe: 0.05 to 0.6 mass %, Cu: 0.01 to 0.6 mass %, Mn: 0.01 to 0.8 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.2 mass %, and the balance being Al and inevitable impurities. (Page 5-6). It would have been obvious to one of ordinary skill in the art at the time of

the invention was made to modify Kubota et al. to have the Al-Si series alloy consists essentially of Si: 5 to 15 mass %, Fe: 0.05 to 0.6 mass %, Cu: 0.01 to 0.6 mass %, Mn: 0.01 to 0.8 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.2 mass %, and the balance being Al and inevitable impurities. Jiang et al. discloses the Al-Si series alloy consists essentially of Si: 5 to 15 mass %, Fe: 0.05 to 0.6 mass %, Cu: 0.01 to 0.6 mass %, Mn: 0.01 to 0.8 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.2 mass %, and the balance being Al and inevitable impurities, as taught by Syslak et al. for the purpose of enhancing corrosion resistance.

18. Regarding claim 9, Kubota et al. discloses all the claimed features as set forth above except for the molten metal to become the core material consists essentially of Si: 0.05 to 1.5 mass %, Fe: 0.05 to 2 mass %, Cu: 0.05 to 0.8 mass %, Mn: 0.15 to 2.8 mass %, at least one of elements selected from the group consisting of Cr: 0.03 to 0.7 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.3 mass %, and Zn: 0.01 to 1.5 mass %, and the balance being Al and inevitable impurities. Syslak et al. discloses a brazing sheet consists of Si: 0.05 to 1.5 mass %, Fe: 0.05 to 2 mass %, Cu: 0.05 to 0.8 mass %, Mn: 0.15 to 2.8 mass %, at least one of elements selected from the group consisting of Cr: 0.03 to 0.7 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.3 mass %, and Zn: 0.01 to 1.5 mass %, and the balance being Al and inevitable impurities (Page 5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kubota et al. to have the molten metal to become the core material consists essentially of Si: 0.05 to 1.5 mass %, Fe: 0.05 to 2 mass %, Cu: 0.05 to 0.8 mass %, Mn: 0.15 to 2.8 mass %, at least one of elements selected from the group

consisting of Cr: 0.03 to 0.7 mass %, Mg: 0.01 to 0.2 mass %, Ti: 0.01 to 0.3 mass %, and Zn: 0.01 to 1.5 mass %, and the balance being Al and inevitable impurities, as taught by Syslak et al., for the purpose of strengthening of the material.

19. Regarding claim 15, Kubota et al. discloses all the claimed features as set forth above except for the clad material is heat exchanger component material. Syslak et al. discloses a clad material is heat exchanger component material (Page 1, Lines 6-12). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kubota et al. to use the clad material is heat exchanger component material, for the purpose of withstanding the corrosion.

20. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (JP 2003-071588) in view of Syslak et al. (WO 02/090031) and further view of Jiang et al. (WO 03/054242) (cited by applicant).

21. Regarding claim 10, the combined references disclose all the claimed features as set forth above except or the molten metal further includes at least one of elements selected from the group consisting of Zr: 0.15 to 1.5 mass %, V: 0.03 to 1.5 mass %, and Sc: 0.02 to 0.5 mass %. Jiang et al. discloses an aluminum alloy includes Zr: 0.1 to 0.18 mass % elements in the molten metal. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the combined reference to have the molten metal further includes at least one of elements selected from the group consisting of Zr: 0.15 to 1.5 mass %, V: 0.03 to 1.5 mass %, and Sc: 0.02 to 0.5 mass %, as taught by Jiang et al., for the purpose of strengthening the material.

22. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (JP 2003-071588) in view of Wyatt-Mair (US Pat. 6,391,127) (new cited).

23. Regarding claim 14, Kubota et al. discloses all the claimed features as set forth above except for the an average spacing of a dendrite secondary arm spacing of the core material formed by the heat roll cladding is 0.1 to 10 μm . Wyatt-Mair discloses a dendrite secondary arm spacing of the core material formed by the heat roll cladding is 0.1 to 10 μm (Col 9, Lines 16-18). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kubota et al. to have the average spacing of a dendrite secondary arm spacing of the core material formed by the heat roll cladding is 0.1 to 10 μm , as taught by Wyatt-Mair, for the purpose of enhancing the corrosion resistant.

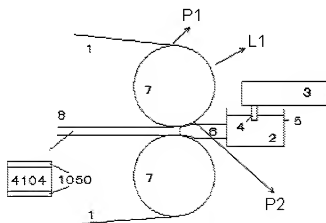


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG NGUYEN whose telephone number is (571)270-7828. The examiner can normally be reached on Monday-Friday, 8:30AM-6PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG NGUYEN/
Examiner, Art Unit 3742
6/29/2009

/TU B HOANG/
Supervisory Patent Examiner, Art Unit 3742